

WHAT IS CLAIMED IS:

1. A pattern forming method comprising:

providing a polymerization initiation layer which is obtained by fixing, by a cross-linking reaction, a polymer having functional groups having polymerization initiation ability and cross-linking groups at side chains, on a support; and

forming a pattern comprising a preparation zone and a non-preparation zone of a graft polymer by preparing the graft polymer on the surface of the polymerization initiation layer using graft polymerization, by contacting a compound having a polymerizable group on the polymerization initiation layer and supplying energy imagewise.

2. An image forming method comprising:

providing a polymerization initiation layer which is obtained by fixing, by a cross-linking reaction, a polymer having functional groups having polymerization initiation ability and cross-linking groups at side chains, on a support;

forming a pattern comprising a preparation zone and a non-preparation zone of a graft polymer by preparing the graft polymer on the surface of the polymerization initiation layer using graft polymerization, by contacting a compound having a polymerizable group on the polymerization initiation layer and

supplying energy imagewise; and

adhering a colorant on the preparation zone or the non-preparation zone of the graft polymer.

3. A fine particle adsorption pattern forming method comprising:

forming a polymerization initiation layer which is obtained by fixing, by a cross-linking reaction, a polymer having functional groups having polymerization initiation ability and cross-linking groups at side chains, on a support;

preparing a graft polymer having a polar group in a pattern shape on the surface of the polymerization initiation layer; and

adsorbing fine particles on the graft polymer.

4. A fine particle adsorption pattern forming method comprising:

forming a polymerization initiation layer which is obtained by fixing, by a cross-linking reaction, a polymer having functional groups having polymerization initiation ability and cross-linking groups at side chains, on a support;

forming a pattern comprising a preparation zone and a non-preparation zone of a graft polymer by preparing the graft polymer on the surface of the polymerization initiation layer using graft polymerization, by contacting a compound having a

polymerizable group and a polar group on the polymerization initiation layer and supplying energy imagewise; and

adsorbing fine particles on the preparation zone of the graft polymer.

5. A fine particle adsorption pattern forming method comprising:

forming a polymerization initiation layer which is obtained by fixing, by a cross-linking reaction, a polymer having functional groups having polymerization initiation ability and cross-linking groups at side chains, on a support;

forming a pattern comprising a hydrophilic zone and a hydrophobic zone on the surface of the polymerization initiation layer, by providing a polymer compound layer comprising a polymer compound which is directly and chemically bonded with the polymerization initiation layer and has a functional group whose hydrophilicity or hydrophobicity is changed by heat, acid or radiation and applying heat, acid or radiation imagewise to the polymer compound layer; and

adsorbing fine particles on the hydrophilic zone or the hydrophobic zone.

6. A conductive pattern forming method comprising:

forming a polymerization initiation layer which is obtained by fixing, by a cross-linking reaction, a polymer

having functional groups having polymerization initiation ability and cross-linking groups at side chains, on a support;

preparing a graft polymer having a polar group in a pattern shape on the surface of the polymerization initiation layer; and

adsorbing a conductive material on the graft polymer.

7. A conductive pattern forming method according to claim 6, wherein the conductive material is further heated at a temperature in a range of 50 to 500°C after the conductive material is adsorbed.

8. A conductive pattern forming method comprising:  
forming a polymerization initiation layer which is obtained by fixing, by a cross-linking reaction, a polymer having functional groups having polymerization initiation ability and cross-linking groups at side chains, on a support;

forming a pattern comprising a preparation zone and a non-preparation zone of a graft polymer by preparing the graft polymer on the surface of the polymerization initiation layer using graft polymerization, by contacting a compound having a polymerizable group and a polar group on the polymerization initiation layer and supplying energy imagewise; and

adsorbing a conductive material on the preparation zone of the graft polymer.

9. A conductive pattern forming method comprising:  
forming a polymerization initiation layer which is obtained by fixing, by a cross-linking reaction, a polymer having functional groups having polymerization initiation ability and cross-linking groups at side chains, on a support;  
forming a pattern comprising a hydrophilic zone and a hydrophobic zone on the surface of the polymerization initiation layer, by providing a polymer compound layer comprising a polymer compound which is directly and chemically bonded with the polymerization initiation layer and has a functional group whose hydrophilicity or hydrophobicity is changed by heat, acid or radiation and applying heat, acid or radiation imagewise to the polymer compound layer; and  
adsorbing a conductive material on the hydrophilic zone or the hydrophobic zone.

10. A pattern forming material comprising:  
a support;  
a polymerization initiation layer formed on the support by using a polymer having functional groups having polymerization initiation ability at side chains; and  
a pattern comprising a preparation zone and a non-preparation zone of a graft polymer which is directly and chemically bonded on the surface of the polymerization

initiation layer.

11. A pattern forming material according to claim 10, wherein the polymer having functional groups having polymerization initiation ability at side chains further has cross-linking groups at side chains.

12. A pattern forming material according to claim 11, wherein the polymerization initiation layer is formed by cross-linking of the polymer having the cross-linking groups at side chains by a cross linking reaction due to heat.

13. A pattern forming material according to claim 10, wherein the preparation zone of the graft polymer exhibits hydrophilicity or hydrophobicity, and a hydrophilicity or hydrophobicity of the non-preparation zone is different from that of the preparation zone.

14. A pattern forming material according to claim 10, wherein a substance is applied to the preparation zone of the graft polymer.

15. A pattern forming material according to claim 14, wherein the substance is a colorant.

16. A pattern forming material according to claim 14, wherein the substance is fine particles.

17. A pattern forming material according to claim 14, wherein the substance is a conductive material.

18. A pattern forming material according to claim 10, wherein the preparation zone of a graft polymer is formed by pattern-shaped energy application.

19. A planographic printing plate comprising:  
a pattern comprising a preparation zone and a non-preparation zone of a graft polymer which is directly and chemically bonded on the surface of a polymerization initiation layer which contains a polymer having functional groups having polymerization initiation ability at side chains and is provided on a support, wherein the preparation zone of a graft polymer exhibits hydrophilicity or hydrophobicity, and a hydrophilicity or hydrophobicity of the non-preparation zone is different from that of the preparation zone.